

AD



MONTHLY
MICROCLIMATIC SUMMARY

NOVEMBER 1967

ENVIRONMENTAL DATA BASE
FOR REGIONAL STUDIES IN THE HUMID TROPICS

USATECOM Project No. 9-4-0013-01

US ARMY
TROPIC TEST CENTER
Fort Clayton, Canal Zone

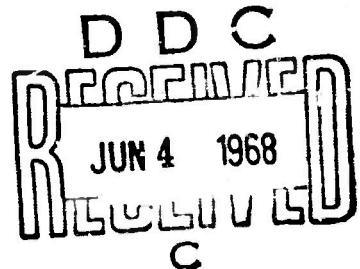
Sponsored by

Advanced Research Projects Agency, ARPA Order No. 740

Army Research Office, OCRD, Project No. 2M25001A724 01

Reproduced by the
CLEARINGHOUSE
for Federal Scientific & Technical
Information Springfield Va. 22151

This document has been approved
for public release and sale; its
distribution is unlimited.



26

DISCLAIMER NOTICE

THIS DOCUMENT IS THE BEST
QUALITY AVAILABLE.

COPY FURNISHED CONTAINED
A SIGNIFICANT NUMBER OF
PAGES WHICH DO NOT
REPRODUCE LEGIBLY.

ENVIRONMENTAL DATA BASE
FOR REGIONAL STUDIES IN THE HUMID TROPICS

MONTHLY
MICROCLIMATIC SUMMARY

NOVEMBER 1967

Prepared by

Michael A. Fradel, Project Officer
and
Dr. Wilfried H. Portig, Meteorologist
USATECOM Project No. 9-4-0013-01

This research was supported by the Advanced
Research Projects Agency of the Department
of Defense and by the Army Research Office,
OCRD, Department of Army

Conducted by

US Army
Tropic Test Center
Fort Clayton, Canal Zone
with contractual services provided by
Weather Engineers of Panama Corp.

ACCESSION FOR		WHITE SECTION <input checked="" type="checkbox"/>
COPY	OLD	BUFF SECTION <input type="checkbox"/>
UNCLASSIFIED		
JUSTIFICATION		
BY		
DISTRIBUTION/AVAILABILITY CODES		
DIST.	AVAIL. and/or	SPECIAL

Destroy this report when it is no longer needed. Do not return it to the originator.

The findings in this report are not to be construed as an official Department of the Army position unless so designated by other authorized documents.

The use of trade names in this report does not constitute an official endorsement or approval of such commercial hardware or software. This report may not be cited for purposes of advertisement.

Distribution of this document is unlimited

TABLE OF CONTENTS

	<u>PAGE</u>
Introduction	1
Sites	1
Instrumentation.	1
Data Reduction and Storage	2
 Figures	
1. Location Map, Isthmus of Panama	3
2. Frequency of Observations	4
3. Albrook Forest Site, Generalized Plot	5
4. Chiva Chiva Open Site, Generalized Plot	6
5. Instrument Location on Tower	7
 Data Summary Sheets	
Monthly Means of Air Temperature by Hour	8
Monthly Ranges of Air Temperature by Hour.	9
Monthly Means of Relative Humidity by Hour	10
Monthly Ranges of Relative Humidity by Hour.	11
Monthly Means of Other Elements by Hour	12
Monthly Means of Wet Bulb Temperature by Hour	
Monthly Means of Barometric Pressure by Hour	
Monthly Means of Precipitation by Hour	
Monthly Totals of Precipitation by Hour	
Monthly Ranges of Other Elements by Hour	13
Monthly Ranges of Wet Bulb Temperature by Hour	
Monthly Ranges of Barometric Pressure by Hour	
Monthly Ranges of Precipitation by Hour	
Monthly Means of Wind Speed by Hour.	14
Monthly Ranges of Wind Speed by Hour	15
Relative Frequencies of Wind Directions (39 meters, Albrook) . . .	16
Relative Frequencies of Wind Directions (32 meters, Albrook) . . .	17
Relative Frequencies of Wind Directions (26.5 meters, Chiva Chiva)	18
Relative Frequencies of Wind Directions (4 meters, Chiva Chiva). .	19
Summary of Elements with Non-Hourly Frequencies of Observation. .	20
Evaporation (Albrook)	
Precipitation (Manual gauge network, Albrook)	
Evaporation (Chiva Chiva)	

BLANK PAGE

MONTHLY MICROCLIMATIC SUMMARY

Introduction

Monthly microclimatic data summarized in this series of reports were collected by the US Army Tropic Test Center and the Weather Engineers of Panama Corporation under the project, Environmental Data Base for Regional Studies in the Humid Tropics. The project is sponsored by the Advanced Research Projects Agency of the Department of Defense and by the Army Research Office, Office of the Chief of Research and Development. It is an investigation of microclimatic, air chemistry, vegetation, soils, microbiological, and macrofaunal conditions at selected sites in the principal tropical environments of the Panama Canal Zone and the Rio Hato Military Reservation. The objective of the project is to assemble quantitative environmental data for RDT&E purposes.

Sites. Data summarized in this report were collected at the Albrook Forest and Chiva Chiva sites. Figure 1 shows the site locations within the Isthmus of Panama. Geographic coordinates are shown below:

Albrook Forest	09° 01'N,	79° 33'W
Chiva Chiva	09° 01'N,	79° 35'W

The Chiva Chiva open site and the Albrook Forest site are paired for comparative study of environmental conditions in a tropical semideciduous forest and in a large clearing. Both are located in a region where the annual precipitation is approximately 80 inches and there is a pronounced dry season. The other satellite sites were located primarily for soil studies purposes. Albrook and Fort Kobbe have climatic regimes similar to the principal sites.

The Albrook and Chiva Chiva main sites are approximately four kilometers apart. Each has a 46 meter walk-up tower and an air-conditioned building to house the recording equipment and observers. Both sites are approximately 30 meters above sea level. The top of the forest canopy at the Albrook site is about 26.5 meters above the ground.

Instrumentation. A wide range of climatic elements are measured at the Albrook and Chiva Chiva sites. Types of observations and frequencies are shown on Figure 2. The towers at the Albrook and Chiva Chiva sites are similarly oriented. Sensing equipment is mounted at several levels on the towers to provide measurements through the vertical profile. Additional instruments are emplaced in the immediate vicinity on or near the ground. All instrument exposures are duplicated at each site. Figures 3, 4, and 5 show the instrument array at these sites.

Data Reduction and Storage. All data, as applicable, are recorded at or reduced to each full hour and transposed to punch cards. These punch cards, together with all raw data, are stored in the Tropic Test Center Technical Library Annex.

The relative humidity data contained in this report required some adjustment due to the difficult problems in maintaining hair hygrometers in the humid tropics. The hygrometers show saturation at a time when the psychrometer shows a relative humidity well below 100%. For this reason the hourly measurements made by means of a hair hygrometer have been modified on the basis of simultaneous psychrometer readings of other levels. Details will be given in the fourth Semiannual Report. It can be assumed that the means of relative humidity presented in this volume are very close to the true means.

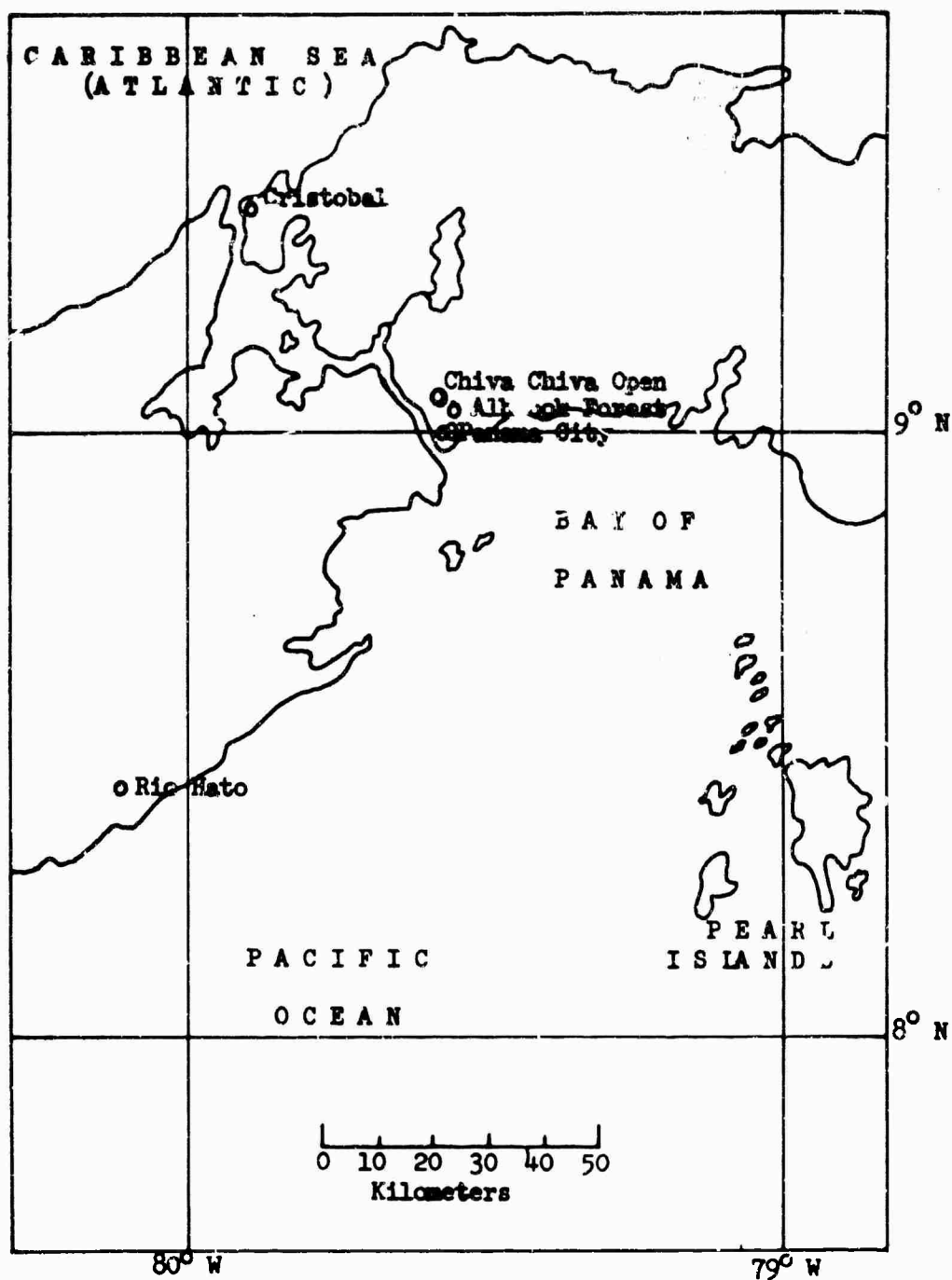


FIGURE 1. LOCATION MAP, ISTHMUS OF PANAMA

FIGURE 2. FREQUENCY OF OBSERVATIONS

# Element	0.5	1.0	2.0	4.0	13.5	26.5	30.0	32.0	39.0	46.0	Frequency
<u>Temperature:</u>											
Dry Bulb	1	2	2	2	1	1	-	-	-	1	Hourly*
Wet Bulb	1	-	2	2	-	-	-	-	-	-	Hourly*
<u>Relative Humidity:</u>											
	1	2	2	2	1	1	-	-	-	1	Hourly*
<u>Barometric Pressure:</u>											
	-	1	-	-	-	-	-	-	-	-	Continuously
<u>Evaporation:</u>											
	1	-	-	-	2	2	-	-	-	-	Once Daily
<u>Precipitation:</u>											
Recording Gage	-	1	-	-	-	-	-	-	-	2	Continuously
Manual Gage	-	2	-	-	-	-	-	-	-	-	4 Times Daily
<u>Wind:</u>											
Direction	-	-	-	-	-	-	-	2	2	-	Continuously
Speed	-	-	-	3	-	3	2	2	2	-	Hourly

1. Albrook and Chiva Chiva

2. Albrook only

3. Chiva Chiva only
- * Observation made with sling psychrometer when recorders are inoperative.

Instrument descriptions are contained in the Environmental Data Base semiannual reports.

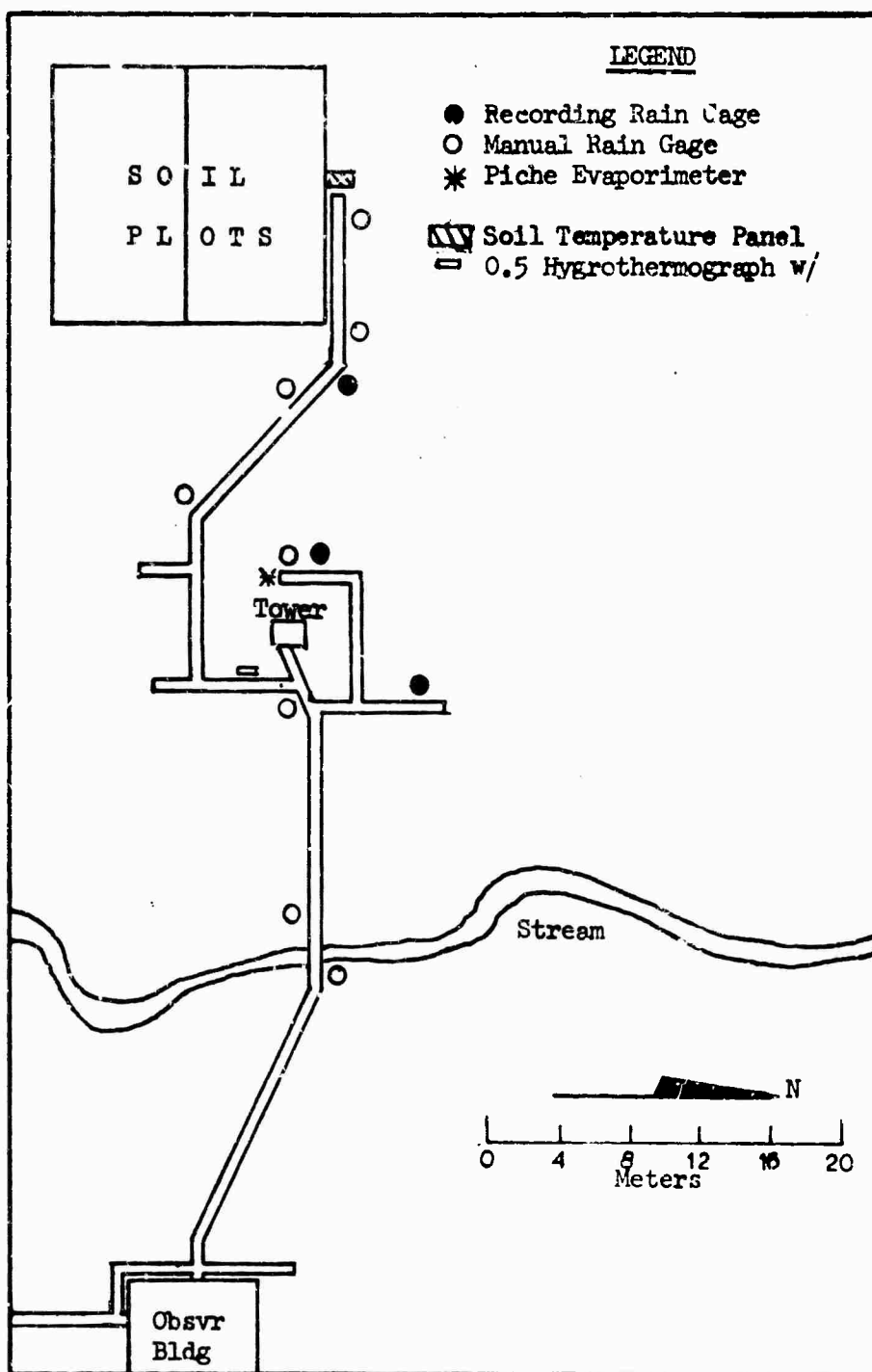


FIGURE 3.
ALBROOK FOREST SITE, GENERALIZED PLOT

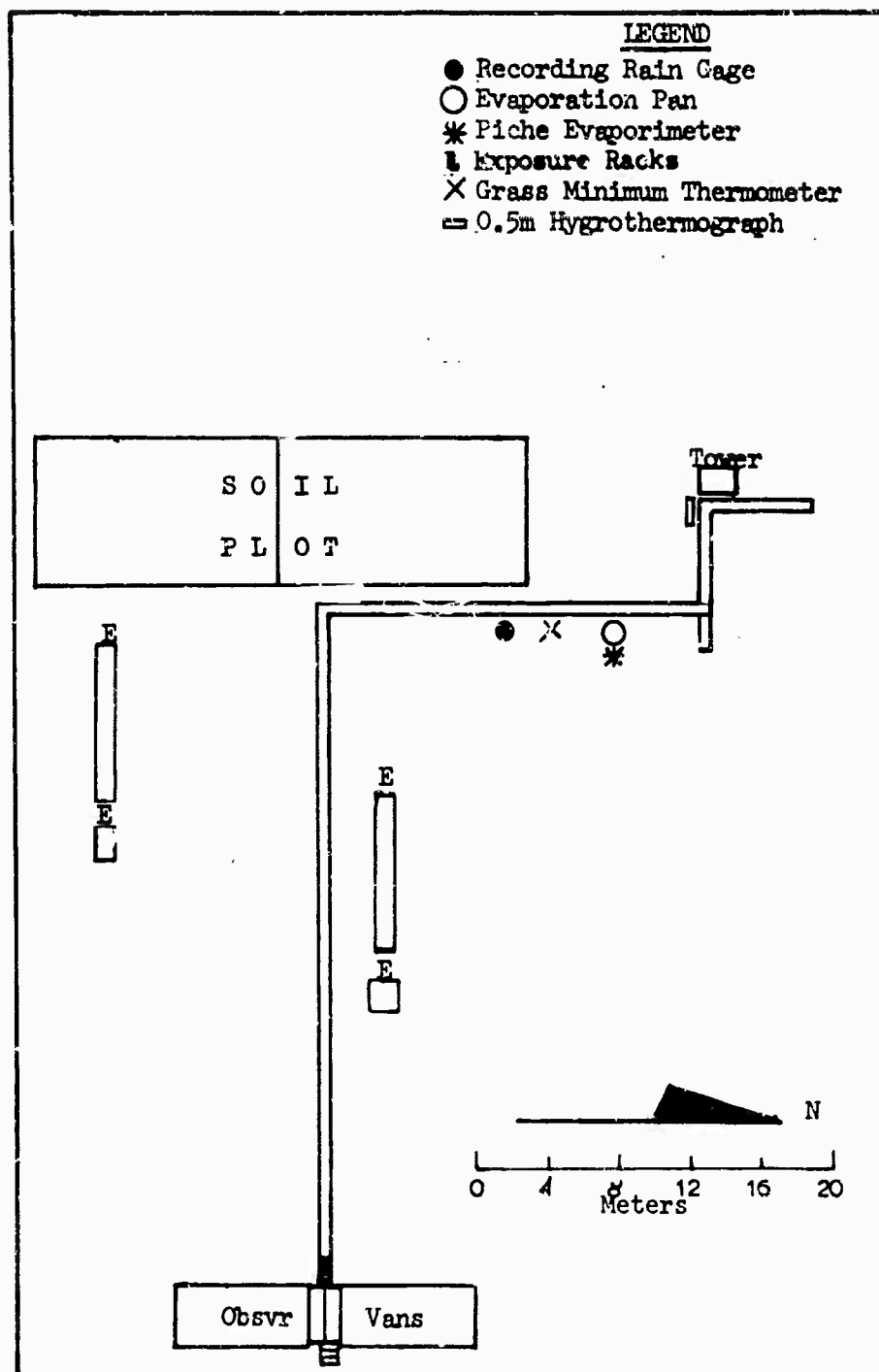


FIGURE 4.

CHIVA CHIVA OPEN, GENERALIZED . JT

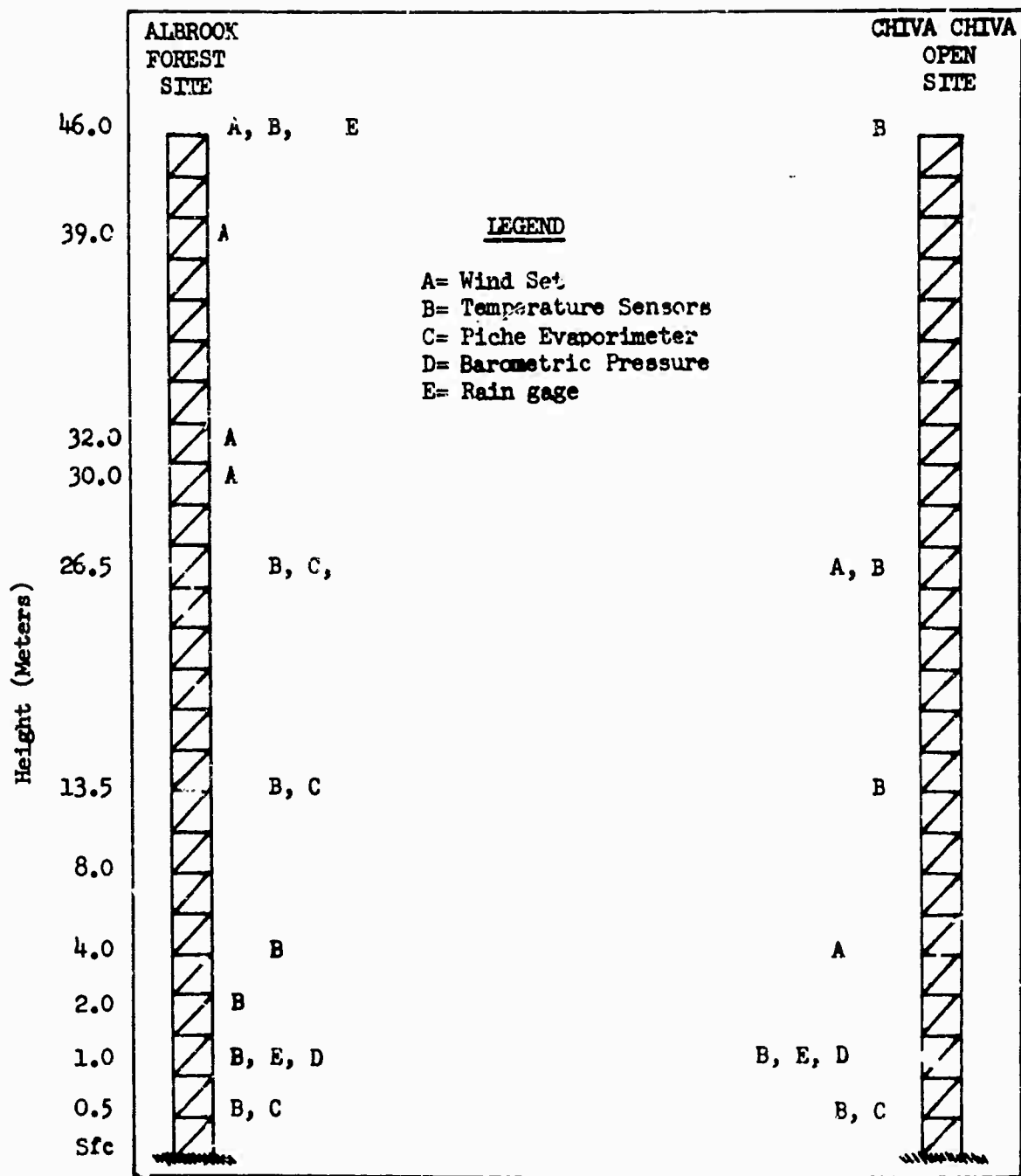


FIGURE 5. INSTRUMENT LOCATION ON TOWERS

SUMMARY OF METEOROLOGICAL OBSERVATIONS
HOURLY DATA
NOVEMBER 1967

Exposure	Site	Monthly Ranges of Air Temperature by Hour (°F)																								Monthly Summary*	
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
10.5 m 24.5 m	4.	4.7	4.7	4.6	4.6	4.6	5.2	5.2	5.2	10.7	12.6	12.7	13.1	10.7	11.2	12.0	11.1	5.2	5.9	5.3	3.7	4.9	6.0	4.4			
	This level was not instrumented for air temperature at this time																										
	3.	6	1.9	5.1	1.6	1.6	1.7	4.6	7.1	5.6	5.9	5.4	11.4	10.7	10.5	10.1	4.9	6	3.4	3.4	3.4	3.8	3.5	4.2	6.0		
	13.5 m	7.5	6.5	6.2	6.0	5.	6.4	4.6	6.1	6.	8.1	8.3	11.0	10.7	9.6	9.6	7.1	5.7	5.0	4.2	5.5	5.5	6.0	4.7			
	21.0 m	This level was not instrumented for air temperature at this time																									
Albrecht (Forest site)	3.0 m	6.3	5.1	4.5	4.2	4.6	4.6	4.6	4.6	4.7	7.4	6.1	11.1	6.2	7.2	7.7	5.9	4.0	5.6	4.2	4.9	5.0	5.0	5.5	6.0		
	11.0 m	6.4	6.3	6.6	6.1	6.	6.1	6.1	6.	6.	7.	6.	6.4	6.4	7.6	6.9	6.1	4.	4.9	4.9	5.0	5.0	5.4	5.9	6.4		
	16.0 m	6.5	6.5	6.1	6.1	6.	6.4	6.6	6.9	6.6	6.7	6.1	6.9	6.4	6.7	6.4	6.2	3.8	4.7	5.1	5.0	5.0	4.9	4.9	6.5		
	21.0 m	6.	6.3	6.6	6.6	6.1	6.1	6.	6.	6.	6.6	6.6	7.0	6.7	7.6	6.1	5.8	4.0	4.1	5.0	5.0	5.0	4.9	4.9	6.4		
	* No monthly summary was computed for the ranges.																										

10.5 m	6.7	6.6	6.4	7.0	6.4	6.0	8.1	1.1	1.2	12.8	11.0	11.4	9.1	7.0	6.7	7.1	9.6	6.0	6.1	6.0	5.1			
	This level was not instrumented for air temperature at this time																							
11.0 m	6.	6.1	6.6	6.6	6.	6.5	6.3	7.8	10.2	9.4	11.2	12.8	11.2	10.8	11.4	9.5	7.0	6.2	6.7	9.0	5.3	5.2	5.6	
16.5 m	6.1	6.7	5.4	6.7	6.0	5.4	5.1	6.8	6.3	8.0	10.8	11.9	11.7	11.0	12.4	10.0	7.7	6.4	6.7	9.0	5.9	6.5	5.8	6.0
	This level was not instrumented for air temperature at this time																							
21.0 m	This level was not instrumented for air temperature at this time																							
3.0 m	This level was not instrumented for air temperature at this time																							
11.0 m	This level was not instrumented for air temperature at this time																							
16.0 m	This level was not instrumented for air temperature at this time																							
21.0 m	This level was not instrumented for air temperature at this time																							
	6.	6.6	6.	6.	6.1	6.1	7.6	8.8	10.3	10.5	3.5	10.1	14.9	11.8	12.3	9.6	7.5	6.8	5.4	5.7	5.9	6.3	5.2	6.5

SUMMARY OF METEOROLOGICAL OBSERVATIONS
 HOURLY DATA
 NOVEMBER 1967

Exposure	Monthly Means of Relative Humidity by Hour (%)																								Monthly Summary						
	Site	Level	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	No. of Obs.	Min.	Mean	Max.	
Mallack (Forest site)	46.0 m	54	94	95	95	94	94	94	92	89	85	81	76	76	80	81	81	83	86	87	89	91	91	92	92	93	719	59	88	99	
	28.5 m		This level was not instrumented for relative humidity at this time																												
	26.5 m	97	97	96	97	96	96	96	96	93	88	82	78	79	81	84	85	87	90	95	95	96	96	96	96	97	710	65	91	99	
	13.5 m	97	97	97	97	97	96	96	96	95	92	87	93	82	84	85	87	89	91	93	94	95	95	96	96	96	716	66	92	100	
	8.0 m		This level was not instrumented for relative humidity at this time																												
Mallack (Forest site)	46.0 m	97	97	97	97	97	97	97	97	95	93	90	89	89	91	92	92	92	95	96	96	97	97	97	97	97	704	75	95	100	
	26.5 m	99	99	99	99	99	99	99	99	98	97	94	92	92	93	93	95	96	96	98	98	98	99	99	99	98	711	73	97	100	
	13.5 m	99	98	98	99	99	99	99	98	98	97	95	93	93	94	94	96	96	97	98	98	98	98	98	98	98	718	75	97	100	
	8.0 m	99	99	99	99	99	99	99	99	99	98	96	95	96	95	96	97	97	98	98	99	99	99	99	99	99	717	81	98	100	

46.0 m	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	
--------	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	--

SUMMARY OF METEOROLOGICAL OBSERVATIONS

HOURLY DATA

NOVEMBER 1967

Exposure	Monthly Ranges of Relative Humidity by Hour (%)																								Monthly Summary*	
	Site	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		24
46.0 m	13	8	9	10	8	11	12	15	22	28	36	38	36	35	30	36	27	18	20	18	17	16	19	11		
28.5 m									This level was not instrumented for relative humidity at this time																	
26.5 m	4	4	4	4	4	4	4	4	12	19	25	31	32	30	27	33	28	18	12	5	5	4	4	3		
13.5 m	7	6	6	6	6	6	7	11	18	21	29	29	31	32	28	32	30	19	11	12	9	9	8	7		
8.5 m									This level was not instrumented for relative humidity at this time																	
4.0 m	10	9	6	8	4	9	8	11	18	19	21	23	24	24	24	24	15	11	11	10	8	9	8	8		
2.0 m									6	9	10	17	18	27	24	16	13	9	9	5	7	5	5	5		
1.0 m									5	6	10	13	17	23	20	25	14	12	9	8	7	5	8	5	6	5
0.5 m	1	3	1	4	1	4	5	6	8	14	17	17	18	16	13	9	7	5	5	4	5	4	6	4		

* No monthly summary was computed for the ranges.

SUMMARY OF METEOROLOGICAL OBSERVATIONS

HOURLY DATA

NOVEMBER 1967

Exposure		Monthly Mean ^{1,2} of other Elements by Hour																								Monthly Summary			
Site	Code ¹	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	No. of Obs.	Min.	Mean	Max.
Albrook (Forest site)	WB (4.0 m)	73.1	73.0	72.9	72.7	72.6	72.5	73.1	74.7	75.7	76.6	77.1	77.5	77.0	76.6	76.7	76.2	75.9	75.1	74.4	74.1	73.8	73.5	73.2	73.1	704	66.8	74.7	80.0
	WB (2.0 m)	73.4	73.3	73.2	73.1	73.1	73.0	73.3	74.6	76.1	76.9	77.7	77.8	77.4	77.1	77.3	77.0	76.4	75.7	75.0	74.5	74.2	74.0	73.7	73.5	715	69.5	75.1	80.5
	WB (0.5 m)	73.6	73.5	73.4	73.3	73.2	73.1	73.3	74.7	76.1	77.1	78.0	78.2	77.8	77.6	77.6	77.3	76.7	75.9	75.2	74.8	74.3	74.2	73.9	73.7	717	69.5	75.3	80.6
	BP	75.0	733	722	716	724	736	758	777	791	796	779	757	731	706	687	683	694	707	726	746	761	771	772	758	718	620	741	860
Albrook	P1	0.01	0.00	0.00	0.01	0.05	0.17	0.01	0.03	0.03	0.04	0.07	0.08	0.45	0.05	0.10	0.13	0.12	0.32	0.08	0.17	0.02	0.01	0.10	0.00	75	0.01	9.83	1.43
	P2	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.02	0.02	0.03	0.29	0.02	0.11	0.15	0.04	0.45	0.03	0.01	0.00	0.00	0.09	0.03	43	0.01	4.70	0.82
	P4	0.00	0.00	0.00	0.00	0.03	0.09	0.01	0.00	0.02	0.00	0.02	0.05	0.25	0.02	0.09	0.13	0.10	0.07	0.03	0.08	0.02	0.00	0.04	0.04	44	0.01	4.40	0.69

Albrook (Forest site)	WB (4.0 m)	72.8	72.8	72.7	72.3	72.3	72.4	73.6	75.8	77.1	77.8	78.2	78.6	77.8	77.5	77.4	76.8	76.1	75.2	74.7	74.1	73.7	73.4	73.3	73.2	597	67.5	75.0	81.0
		841	822	811	806	812	829	850	870	884	887	873	846	821	796	779	776	785	801	820	841	856	864	863	855	720	685	833	950
		0.05	0.02	0.02	0.01	0.07	0.10	0.03	0.00	0.06	0.02	0.28	0.11	0.10	0.14	0.08	0.06	0.01	0.01	0.10	0.15	0.13	0.01	0.02	0.01	48	0.01	4.08	0.75
Albrook (Forest site)	BP																												

WB - Wet Bulb (4.0 m) BP - Barometer (4.0 m) P1 - Precipitation at 1.0 m. in open area (in.) P2 - Precipitation under full canopy (in.)
 P3 - Precipitation at 4.0 m. above canopy (in.) P4 - Precipitation under pen canopy (in.)
 Monthly totals are substituted for the mean in the monthly summary.

SUMMARY OF METEOROLOGICAL OBSERVATIONS

HOURLY DATA

NOVEMBER 1967

Exposure		Monthly Ranges ² of other Elements by Hour																								Monthly Summary*	
Site	Code ¹	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Abrook (Forest site)	WB (4.0 m)	6.6	6.7	7.0	7.5	7.9	8.0	8.0	6.0	5.1	5.8	4.1	6.0	5.9	5.9	5.8	6.5	5.5	5.3	5.8	5.5	5.9	5.9	7.0	6.7		
	WB (2.0 m)	6.0	5.0	5.1	5.1	5.2	5.6	5.8	4.1	4.0	4.1	5.3	4.7	6.7	5.1	6.4	6.0	5.5	3.4	3.9	4.6	4.2	4.6	6.0	5.9		
	WB (0.5 m)	6.1	5.1	5.1	5.0	5.2	5.1	5.3	4.0	3.4	4.4	5.4	4.9	6.5	5.0	5.8	5.7	4.7	3.1	3.4	4.7	4.3	4.2	5.3	5.8		
	8P	.130	.135	.145	.135	.135	.140	.135	.135	.135	.140	.150	.135	.140	.130	.135	.125	.130	.130	.125	.130	.130	.140	.145	.220		
	P1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	1.42	0.09	0.18	0.50	0.23	0.60	0.11	0.60	0.00	0.00	0.18	0.00		
	P2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.80	0.03	0.14	0.23	0.06	0.00	0.01	0.00	0.00	0.00	0.00	0.02		
	P4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.67	0.03	0.24	0.41	0.12	0.09	0.00	0.12	0.00	0.00	0.03	0.00		

* No monthly summary was computed for the ranges.

13

WB (0.5 m)	7.5	6.0	5.9	6.2	6.0	7.0	6.0	5.2	6.0	5.3	5.2	5.0	7.2	5.2	6.8	4.8	4.8	4.9	4.1	5.3	6.0	6.5	5.0	6.0
8P	.145	.140	.145	.125	.130	.135	.130	.130	.165	.175	.180	.160	.145	.150	.155	.160	.160	.135	.135	.140	.140	.135	.125	.140
PS	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.23	0.23	0.49	0.06	0.11	0.00	0.00	0.16	0.00	0.00	0.00	0.00	

(0.5 m) WB
8P
PS

(0.5 m) WB
8P
PS

P2 - Precipitation under full canopy (in.)
P4 - Precipitation under open canopy (in.)

P1 - Precipitation at 1.0 m. in open area (in.)
P2 - Precipitation at 4.0 m. above canopy (in.)

P3 - Precipitation at 0.5 m. above canopy (in.)
P4 - Precipitation at 0.5 m. above canopy (in.)
P5 - Precipitation at 0.5 m. above canopy (in.)
P6 - Precipitation at 0.5 m. above canopy (in.)
P7 - Precipitation at 0.5 m. above canopy (in.)
P8 - Precipitation at 0.5 m. above canopy (in.)
P9 - Precipitation at 0.5 m. above canopy (in.)
P10 - Precipitation at 0.5 m. above canopy (in.)
P11 - Precipitation at 0.5 m. above canopy (in.)
P12 - Precipitation at 0.5 m. above canopy (in.)
P13 - Precipitation at 0.5 m. above canopy (in.)
P14 - Precipitation at 0.5 m. above canopy (in.)
P15 - Precipitation at 0.5 m. above canopy (in.)
P16 - Precipitation at 0.5 m. above canopy (in.)
P17 - Precipitation at 0.5 m. above canopy (in.)
P18 - Precipitation at 0.5 m. above canopy (in.)
P19 - Precipitation at 0.5 m. above canopy (in.)
P20 - Precipitation at 0.5 m. above canopy (in.)
P21 - Precipitation at 0.5 m. above canopy (in.)
P22 - Precipitation at 0.5 m. above canopy (in.)
P23 - Precipitation at 0.5 m. above canopy (in.)
P24 - Precipitation at 0.5 m. above canopy (in.)
P25 - Precipitation at 0.5 m. above canopy (in.)
P26 - Precipitation at 0.5 m. above canopy (in.)
P27 - Precipitation at 0.5 m. above canopy (in.)
P28 - Precipitation at 0.5 m. above canopy (in.)
P29 - Precipitation at 0.5 m. above canopy (in.)
P30 - Precipitation at 0.5 m. above canopy (in.)
P31 - Precipitation at 0.5 m. above canopy (in.)
P32 - Precipitation at 0.5 m. above canopy (in.)
P33 - Precipitation at 0.5 m. above canopy (in.)
P34 - Precipitation at 0.5 m. above canopy (in.)
P35 - Precipitation at 0.5 m. above canopy (in.)
P36 - Precipitation at 0.5 m. above canopy (in.)
P37 - Precipitation at 0.5 m. above canopy (in.)
P38 - Precipitation at 0.5 m. above canopy (in.)
P39 - Precipitation at 0.5 m. above canopy (in.)
P40 - Precipitation at 0.5 m. above canopy (in.)
P41 - Precipitation at 0.5 m. above canopy (in.)
P42 - Precipitation at 0.5 m. above canopy (in.)
P43 - Precipitation at 0.5 m. above canopy (in.)
P44 - Precipitation at 0.5 m. above canopy (in.)
P45 - Precipitation at 0.5 m. above canopy (in.)
P46 - Precipitation at 0.5 m. above canopy (in.)
P47 - Precipitation at 0.5 m. above canopy (in.)
P48 - Precipitation at 0.5 m. above canopy (in.)
P49 - Precipitation at 0.5 m. above canopy (in.)
P50 - Precipitation at 0.5 m. above canopy (in.)
P51 - Precipitation at 0.5 m. above canopy (in.)
P52 - Precipitation at 0.5 m. above canopy (in.)
P53 - Precipitation at 0.5 m. above canopy (in.)
P54 - Precipitation at 0.5 m. above canopy (in.)
P55 - Precipitation at 0.5 m. above canopy (in.)
P56 - Precipitation at 0.5 m. above canopy (in.)
P57 - Precipitation at 0.5 m. above canopy (in.)
P58 - Precipitation at 0.5 m. above canopy (in.)
P59 - Precipitation at 0.5 m. above canopy (in.)
P60 - Precipitation at 0.5 m. above canopy (in.)
P61 - Precipitation at 0.5 m. above canopy (in.)
P62 - Precipitation at 0.5 m. above canopy (in.)
P63 - Precipitation at 0.5 m. above canopy (in.)
P64 - Precipitation at 0.5 m. above canopy (in.)
P65 - Precipitation at 0.5 m. above canopy (in.)
P66 - Precipitation at 0.5 m. above canopy (in.)
P67 - Precipitation at 0.5 m. above canopy (in.)
P68 - Precipitation at 0.5 m. above canopy (in.)
P69 - Precipitation at 0.5 m. above canopy (in.)
P70 - Precipitation at 0.5 m. above canopy (in.)
P71 - Precipitation at 0.5 m. above canopy (in.)
P72 - Precipitation at 0.5 m. above canopy (in.)
P73 - Precipitation at 0.5 m. above canopy (in.)
P74 - Precipitation at 0.5 m. above canopy (in.)
P75 - Precipitation at 0.5 m. above canopy (in.)
P76 - Precipitation at 0.5 m. above canopy (in.)
P77 - Precipitation at 0.5 m. above canopy (in.)
P78 - Precipitation at 0.5 m. above canopy (in.)
P79 - Precipitation at 0.5 m. above canopy (in.)
P80 - Precipitation at 0.5 m. above canopy (in.)
P81 - Precipitation at 0.5 m. above canopy (in.)
P82 - Precipitation at 0.5 m. above canopy (in.)
P83 - Precipitation at 0.5 m. above canopy (in.)
P84 - Precipitation at 0.5 m. above canopy (in.)
P85 - Precipitation at 0.5 m. above canopy (in.)
P86 - Precipitation at 0.5 m. above canopy (in.)
P87 - Precipitation at 0.5 m. above canopy (in.)
P88 - Precipitation at 0.5 m. above canopy (in.)
P89 - Precipitation at 0.5 m. above canopy (in.)
P90 - Precipitation at 0.5 m. above canopy (in.)
P91 - Precipitation at 0.5 m. above canopy (in.)
P92 - Precipitation at 0.5 m. above canopy (in.)
P93 - Precipitation at 0.5 m. above canopy (in.)
P94 - Precipitation at 0.5 m. above canopy (in.)
P95 - Precipitation at 0.5 m. above canopy (in.)
P96 - Precipitation at 0.5 m. above canopy (in.)
P97 - Precipitation at 0.5 m. above canopy (in.)
P98 - Precipitation at 0.5 m. above canopy (in.)
P99 - Precipitation at 0.5 m. above canopy (in.)
P100 - Precipitation at 0.5 m. above canopy (in.)

SUMMARY OF METEOROLOGICAL OBSERVATIONS

HOURLY DATA

NOVEMBER 1967

Exposure	Monthly Means of Wind Speed by Hour (miles/hr.)																								Monthly Summary					
	Sit.	level	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	No. of Obs.	Min.	Mean	Max.
Albrook (Forest site)		39.0 m	5	5	4	5	5	5	4	4	5	5	6	6	6	6	5	5	5	5	5	5	6	5	4	5	685	0	5	14
		32.0 m	3	3	3	3	3	3	3	3	4	3	4	4	4	4	3	3	3	3	3	3	3	3	2	3	711	0	3	11
		30.0 m	0	0	0	0	0	0	0	4	2	4	4	4	6	3	4	5	2	6	7	12	10	12	16	10	10	21	0	6

12

26.0 m	3	2	3	3	3	3	3	3	3	4	5	6	6	7	8	7	7	7	5	5	4	3	4	3	3	3	712	0	4	15
4. m	2	2	3	2	2	2	2	2	3	3	4	5	5	5	6	5	5	6	4	4	3	3	3	2	2	2	555	0	3	14

ALBROOK (Forest site) NOVEMBER 1967

		Relative Frequencies* of Wind Directions by Hour at 39.0 m. (%)																							
Hr	Dir	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	N	3.3	3.3		3.3		10.0					6.7	13.3	6.7			10.3	3.4	3.4	3.4	3.3			3.3	3.3
	NNE				3.3	3.3	3.3				6.7	6.7									3.3	3.3			3.3
	NE	3.3	3.3	3.3	6.7			3.3		3.3			3.3		3.3	10.0				6.9		3.3	3.3		3.3
	ENE	3.3	3.3	3.3				3.3	3.3	3.3				3.3	6.7									3.3	
	E	3.3		3.3		3.3	3.3	10.0	10.0	3.3			3.3	10.0		3.3	3.4			3.4	3.3	6.7	3.3		
	ESE							6.7		3.3			3.3	3.3	3.3		6.9							3.3	3.3
	SE		3.3	3.3	3.3					6.7	6.7	10.0	3.3	6.7		3.3	6.9	6.9	3.4				3.3	3.3	
	SSE		3.3									6.7			3.3	3.3	3.4	6.9	3.4						3.3
	S			6.7	3.3				3.3		20.0	20.0	26.7	23.3	23.3	20.0	17.2	24.0					3.3		
	SSW	16.7	23.3	6.7	13.3	20.0	3.3	6.7	16.7	16.7	20.0	16.7	20.0	16.7	13.3	13.3	10.3	6.9	6.9	10.3	15.7	3.3	20.0	13.3	13.3
	SW	13.3	23.3	13.3	13.3	13.3	26.7	13.3	13.3	33.3	16.7	16.7	3.3	10.0	6.7	16.7	6.9	10.3	17.2	13.7	13.3	26.7	10.0	6.7	16.7
	WSW	20.0	13.3	16.7	16.7	30.0	20.0	26.7	30.0	10.0	10.0		3.3		16.7	3.3	6.9	10.3	20.6	20.6	26.7	30.0	23.3	20.0	23.3
	W	20.0	13.3	23.3	20.0	3.3	16.7	20.0	6.7	10.0	13.3	6.7	6.7	13.3	16.7	3.3	13.7	24.0	20.6	20.6	13.3	13.3	20.0	26.7	16.7
	WNW	3.3		3.3	6.7	10.0	3.3	3.3	6.7	10.0	3.3	6.7	6.7	3.3	3.3	10.0		3.4	13.7	10.3	6.7	6.7		3.3	3.3
	NW	6.7	6.7	3.3	3.3	6.7	6.7		6.7			3.3			3.3	10.0	10.3		3.4	6.9	3.3		3.3	10.0	6.7
	NNW	6.7		6.7	3.3	3.3	3.3	3.3			3.3		6.7	3.3			3.4	3.4	3.4		6.7	3.3	6.7	3.3	
	CALM		3.3	6.7	3.3	6.7	3.3	3.3	3.3										3.4	3.4	3.3	3.3	3.3	3.3	3.3

* Note: Due to rounding, percentage totals do not equal 100%.

IMPRESORA S. A. 88118

ALBROOK (Forest site) NOVEMBER 1967

		Relative Frequencies* of Wind Directions by Hour at 32.0 m. (%)																							
Dir	Hr	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
N		13.3	3.3	3.3	16.7	3.3	3.3	10.0		6.7	3.3	6.7	6.7	13.3	10.0	3.3	6.9	6.9	10.3	10.3	10.0	6.7	16.7	6.7	10.0
NNE		3.3		3.3					3.3		10.0		3.3		3.3	6.7	3.4	3.4				6.7	3.3	6.7	3.3
NE		3.3	3.3	6.7			3.3	3.3				6.7	3.3		3.3	6.7			6.9	6.9	6.7	3.3		3.3	3.3
NNE			3.3		3.3				6.7	3.3	3.3	6.7		3.3		3.3	3.4			3.4					
E			3.3	3.3	3.3			3.3	3.3	3.3			3.3	3.3		3.3	3.4				3.3		6.7	3.3	3.3
ESE		3.3					3.3	3.3	6.7	3.3			3.3	3.3	6.7				3.4			6.7			
SE				3.3			6.7	3.3		3.3				6.7			10.3	3.4	3.4						
SSE			3.3					3.3		6.7	3.3		10.0	3.3				3.4							
S			3.3		3.3						13.3	26.7	13.3	23.3	23.3	23.3	20.6	17.2							
SSW			3.3	3.3							3.3	3.3	6.7	3.3			3.4		3.4		3.3		3.3		
SW					3.3	6.7				6.7	13.3	10.0	10.0	6.7	3.3				3.4		6.7				
WSW		3.3	3.3	3.3			3.3	6.7	3.3		3.3	6.7	6.7		6.7	6.7	3.4			3.4		6.7	3.3	3.3	3.3
W		13.3	10.0	3.3	3.3	13.3	3.3	6.7	3.3	6.7	3.3	6.7		10.0	6.7	10.0	3.4	13.7		10.3	10.0	6.7	3.3	3.3	13.3
WNW		6.7	10.0	6.7	6.7	6.7	13.3	6.7	6.7	16.7	6.7	6.7	6.7	3.3	10.0	13.3	3.4	6.9	3.4	10.3		3.3	3.3	13.3	6.7
NW		6.7	16.7	3.3	16.7	13.3	23.3	23.3	40.0	16.7	20.0	10.0	10.0	13.3	6.7	10.0	24.0	24.0	30.9	17.2	30.0	33.3	26.7	26.7	20.0
NNW		6.7	16.7	16.7	16.7	16.7	16.7	20.0	20.0	23.3	13.3	10.0	6.7	6.7	13.3	13.3	10.3	10.3	24.0	30.9	20.0	20.0	20.0	23.3	23.3
CALM		1.1	1.1	14.3	14.3	14.3	14.3	10.0	5.7	3.3	3.3		10.0		6.7		3.4	10.3	10.3	6.9	6.7	13.3	10.0	10.0	13.3

* Note: Due to rounding, percentage totals do not equal 100%.

INPRESORA S. A. 1967

CHIVA CHIVA (Open site) NOVEMBER 1967

		Relative Frequencies* of Wind Directions by Hour at 26.5 m. (%)																							
Dir	Hr	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
N		10.0	3.3	10.0			13.7	13.3	6.7	5.7	10.3	6.9	27.5	17.2	16.7	10.0	10.0	10.0		6.9	13.3		3.3	10.0	6.7
NNE		3.3	6.7	3.3	3.3	3.3			3.3	3.3					3.3	3.3		3.3	6.7			3.3	3.3		
NE				3.3	13.3			3.3			3.4			3.4	6.7		3.3		3.3	6.9			3.3		6.7
ENE								3.3			3.4								3.3	3.4			3.3	6.7	3.3
E						3.3		6.7			3.4	6.9		6.9								3.3	3.3		
ESE				3.3						3.3							3.3			3.4					3.3
SE										3.3	6.9	3.4	6.9	6.9	6.7	6.7	3.3	6.7	3.3		3.3		3.3	3.3	
SSE		3.3	3.3							3.3		3.4	6.9	3.4	6.7		6.7		3.3		3.3				
S			3.3							6.7		13.7	13.7	20.6	13.3	16.7	6.7	6.7							
SSW							3.4		3.3								3.3	3.3	3.3						
SW			3.3								6.9						3.3				3.3				
WSW									3.3						3.2	3.3		6.7		3.4					3.3
W		3.3	3.3			6.7	10.0	6.7			3.4	6.9	3.4	3.4			3.3	3.3		6.9	6.7		6.7	3.3	3.3
WNW		3.3	3.3	6.7				6.7	6.7	6.7		10.3	3.4	6.9			6.7	6.7	6.7			3.3	16.7	6.7	6.7
NW		3.3	50.0	3.3	3.3	3.3	40.0	40.0	50.0	3.3	3.3	37.8	24.0	17.2	30.0	40.0	33.3	33.3	37.8	34.3	33.3	60.0	33.3	50.0	46.7
NNW		6.7	10.0	16.7	10.0	16.7	17.2	16.7	20.0	26.7	24.0	10.3	13.7	13.7	13.3	20.0	16.7	13.3	23.3	17.2	23.3	16.7	16.7	10.0	10.0
CA/M		16.7	13.3	3.3	13.3	16.7	17.2	3.3	6.7	6.7	3.4							6.7	10.0	17.2	10.0	6.7	6.7	10.0	10.0

* Note: Due to rounding, percentages totals do not equal 100%.

IMPRESORA S. A. 11511

CHIVA CHIVA (Open site) NOVEMBER 1967

		Relative Frequencies* of Wind Directions by Hour at 4.0 m. (%)																							
Dir	Hr	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
N		10.0	10.0	3.3		20.0	6.7	6.7	6.7	6.7	20.0	10.0	13.3	3.3	13.3	10.0	13.3	6.7	3.4	6.7	16.7		3.3	6.7	3.3
NNE		3.3		3.3	6.7		13.3	10.0	6.7	3.3	3.3			6.7	10.0		3.3	6.7	3.4		6.7	13.3		10.0	16.7
NE		6.7	16.7	3.3	10.0	6.7	6.7	6.7				3.3	3.3	1.7		3.3			6.9	3.3			10.0	3.3	3.3
ENE			3.3	6.7	3.3	3.3	3.3																		
E		3.3		6.7	3.3	3.3	3.3				3.3		3.3	6.7					3.4			3.3	3.3	3.3	
ESE							3.3				6.7					3.3		6.7	6.9				3.3	10.0	3.3
SE		3.3	6.7	3.3	10.0					3.3			3.3	6.7			3.3		3.4	6.7					
SSE			3.3	3.3						6.7		3.3	13.3		3.3	3.3	10.0					3.3	3.3	3.3	
S		3.3			2.3			6.7	3.3		3.3	10.0	3.3	10.0	10.0	6.7		10.0					3.3	3.3	
SSW			3.3			3.3	3.3		3.3	3.3			3.3			3.3	6.7								
SW				3.3	3.3	3.3			6.7	10.0	3.3			3.3		3.3	6.7						3.3		
WSW		6.7		3.3		3.3			3.3	3.3				3.3		3.3	6.7				13.3	6.7			
W		20.0	20.0	6.7	16.7		10.0	20.0	10.0	13.3	13.3	13.3	6.7	16.7	6.7	3.3	13.3	6.7	3.4	3.3		3.3	3.3	6.7	3.3
WNW		10.0	10.0	20.0	10.0	20.0	10.0	10.0	13.3	6.7	6.7	10.0	3.3		6.7	13.3	10.0	10.0	13.7	13.3	13.3	3.3	16.7	6.7	26.7
NW		13.3	13.3	16.7	10.0	16.7	20.0	20.0	23.3	30.0	13.3	26.7	13.3	16.7	33.3	20.0	10.0	23.3	20.6	20.0	20.0	30.0	16.7	26.7	20.0
NNW			6.7	10.0	10.0	6.7	3.3	6.7	13.3	3.3	16.7		13.3	6.7	3.3	16.7	13.3	13.3	24.0	10.0	3.3	13.3	1.3	6.7	3.3
CALM			6.7	6.7	13.3	6.7	6.7	13.3	10.0	10.0	10.0	13.3	13.3	13.3	13.3	10.0	10.0	13.3	10.3	26.7	13.3	13.3	23.3	3.3	3.3

* Note: Due to rounding, percentage totals do not equal 100%.

SUMMARY OF NON HOURLY DATA

NOVEMBER 1967

Summary of Elements with Non-hourly Frequencies of Observation						
Site	Element, Units and Exposure	Description	Number of Obs.	Minimum Value	Mean or Total Value	Maximum Value
Albrook (Forest site)	Evaporation ³ (in. at 3 levels)	Piche (26.5 m)	21	0.004	2.201*	0.232
		Piche (13.5 m)	17	0.006	0.688*	0.092
		Piche (0.5 m)	7	0.006	0.213*	0.061
	Precipitation from Raingauge Network ² (in. at 1.0 meters)	Gauge # 1	33	0.01	6.16*	1.05
		Gauge # 2	35	0.01	11.02*	1.32
		Gauge # 3	34	0.01	8.74*	1.20
		Gauge # 4	33	0.01	8.37*	1.14
		Gauge # 5	33	0.01	8.49*	1.19
		Gauge # 6	34	0.01	8.95*	1.08
		Gauge # 7	32	0.01	9.91*	1.33
		Gauge # 8	33	0.01	7.47*	0.91
Chiva Chiva (Open site)	Evaporation ³ (in. at 0.5 meters)	Piche	24	0.006	3.179*	0.299
		Pan	23	0.039	4.187*	0.640

2 - Six hourly observations

3 - Daily observations

* Total Values